

REMARKS

Claims 14-29 are pending. By this Amendment, claims 14-29 are amended, and no claims are canceled or added.

Claims 14-29, translated from the original French, are amended herein to more closely conform to customary U.S. practice. No new matter has been added and no narrowing amendments are intended.

Claim Rejections – 35 U.S.C. § 112

Claims 14-29 stand rejected under 35 U.S.C. § 112, first paragraph, for purportedly failing to comply with the enablement requirement. In particular, the Office Action states that, with respect to claims 14 and 22, it is unclear how spray can take place if the liquid is to be ejected from the nozzle at pressure P_1 , since P_1 appears to be the pressure of the space in which the liquid is to be sprayed.

Referring to page 3, lines 10-33, of the specification as filed, the liquid is ejected from the injectors (4) at a pressure P_s . P_s is greater than P_1 . The liquid explodes because the pressure P_s of the liquid is greater than the ambient external pressure, and spraying takes place. Along the divergent nozzle (5), the pressure decreases to become equal to P_1 at the exit section of the nozzle. This decrease induces a partial evaporation of the liquid, which in turn induces an increase of the flow rate of the liquid/gas mixture, which further induces an increase of the speed of the liquid particles. The spraying takes place because of the speed attained by the liquid particles.

Therefore, Applicant respectfully requests that the § 112, first paragraph, rejection be withdrawn.

Claims 14-22 stand rejected under 35 U.S.C. § 112, second paragraph, for purportedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Office Action indicates that claims 14 and 22 each include several instances of lack of antecedent basis. Claims 14 and 22 have been amended herein, and Applicant respectfully requests that the § 112, second paragraph, rejections be withdrawn.

In view of the resolution of the aforementioned § 112 rejections and lack of any other rejections of claims 22-29 in the Office Action, Applicant respectfully submits that claims 22-29 are in condition for allowance.

Claims Rejections – 35 U.S.C. § 103

Claims 14-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 3,674,700 to Gaiser (hereinafter “Gaiser”) in view of U.S. Patent No. 5,881,958 to Asakawa et al. (hereinafter “Asakawa”). This rejection is respectfully traversed. Applicant respectfully submits that a *prima facie* case of obviousness has not been established because the cited references, alone or in combination, fail to disclose all the limitations of the claims.

Claim 14, as amended herein, recites that “an exit section of the divergent nozzle is sized such that the mixture is ejected from the divergent nozzle at the pressure P1 of the gaseous medium at maximum ejection speed.” As discussed in the specification as filed, the exit section of the divergent nozzle “is sized so that the mixture is ejected from the nozzle at a pressure P1 of

the external medium without forming a pressure wave in the divergent nozzle (5); the ejection speed of the mixture therefore corresponds to the maximum ejection speed.” (Specification as filed, page 3, lines 3-8.) There is no evidence or suggestion of at least this feature in either Gaiser or Asakawa, and the Office Action does not identify any such evidence or suggestion in either reference. Gaiser says only that nozzle 22 “is desirably a simple orifice nozzle.” (Gaiser, col. 3, lines 36-37.) Asakawa, on the other hand, does not even mention overheated liquids or using the physical characteristics of overheated liquids to obtain flashing of a liquid. Asakawa instead describes a nozzle wall surfaces that create “[f]luid jets [that] produce negative pressure regions inwardly of a forward end surface of the nozzle tip.” (Asakawa, Abstract.) It is thus also unclear what would motivate one skilled in the art to combine Gaiser’s “desirably . . . simple orifice nozzle” with Asakawa’s nozzle. Therefore, no *prima facie* case of obviousness has been established with respect to claim 14.

Similar to claim 14, claim 17, as amended herein, recites “an exit section of the divergent nozzle is sized such that the mixture is ejected from the divergent nozzle at the pressure P1 of the gaseous medium at maximum ejection speed.” As discussed above with respect to claim 14, there is no evidence or suggestion of this feature in either Gaiser or Asakawa. Therefore, no *prima facie* case of obviousness has been established with respect to claim 17 at least for the reasons set forth with respect to claim 14.

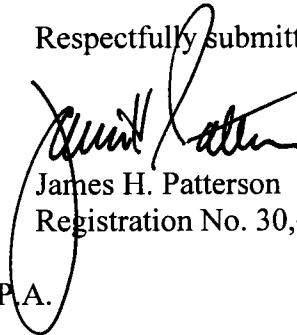
Therefore, claims 14 and 17 are allowable. Claims 15 and 16, and claims 18-21, depend from claims 14 and 17, respectively, and are therefore also allowable. The rejections of claim 15, 16 and 18-21 are traversed but not expressly argued herein in view of the allowability of the underlying base claims.

Conclusion

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "James H. Patterson", is written over the typed name and registration number.

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